

KITCHEN FURNISHING ACCESSORY FOR OUTDOOR AND INDOOR USE,  
PROVIDED WITH AN INTERCHANGEABLE HOB, SUPPORTED BY A  
MODULAR SUPPORT STRUCTURE.

The present invention concerns a kitchen furnishing accessory for cooking foods,  
of the outdoor/indoor type, on wheels or for a fixed position.

#### **FIELD OF APPLICATION OF THE INVENTION**

The particular if not exclusive application of the invention is in the field of  
equipment for catering, banqueting, restaurants, and generally also for interior  
furnishing.

In the sector of providing food and beverages, in the latitude of this country and  
especially during the seasons of the year when the climate is mild, ample use is made of  
equipment specifically designed for cooking food in the open air. This pleasant custom,  
typical of Anglo-Saxon countries, is gradually becoming popular, to the extent that it is  
not only used for outdoor catering or for outdoor community purposes such as catering  
and banqueting, but also to satisfy the desires of an ordinary family with a suitable  
space at their disposal.

The advantages of cooking foods outdoors are many, ranging from the possibility  
of cooking food without the inevitable accumulation of dirt and smell inside the  
building, to the possibility of receiving simultaneously and in the open a quite  
considerable number of people. Then, in the practice of this custom, there is a more  
subtle pleasure which refers substantially to the fact that the consumer appreciates what  
he eats more, if he is in the condition to observe master cooks at work, preparing the  
meals.

These and other aspects, even sometimes rather choreographic, are encouraging  
companies working in the sector to seek innovative solutions, many from the aesthetic  
point of view and many others from the functional point of view.

In this field, barbecues and cookers for outdoor use are known. Both the former  
and the latter make use of gas supply systems, mostly of the type using LPG (Liquefied  
Petroleum Gas) which is formed of a variable mixture of a number of hydrocarbons,  
such as propane and small percentages of propylene, butane and small percentages of  
butylenes. The advantages of LPG lie in the fact that it can be liquefied with moderate  
pressures and in this condition (liquid phase) it is easy to store and handle, since its  
volume in the liquid phase is about 250 times less than the volume of the gas. The  
conventional packaging of LPG, in the liquid phase, is constituted of certified movable  
metal containers, better known as "cylinders", with different capacities, so that these

cylinders must always follow both the barbecue and, even more, the equipped cookers. In some cases there is a housing for the cylinders, mostly of an improvised type, located under the cooking surface, in other cases they may be in compartments separate from the cooking equipment, and connected to the cooker by convenient extension pipes. Other solutions may contemplate the connection of the equipment to the existing mains supply in the building, with fittings which allow it to be used outside. In short, there are many different solutions for supplying the cooking surface, but the most common is still the classic cylinder of LPG.

#### **STATE OF THE ART**

The traditional barbecues fall within this field of use. For example CA2321121 (Goran) describes a barbecue, composed of two sides perpendicular to the ground, on which may be fixed the lateral ends of a V-shaped pan on top of which rests the cooking grill. The lower part is equipped with a gas burner, or with an electric heater.

Also US6182560 (Andress) suggests a barbecue which, unlike the previous one, is composed of four traditional legs, hinged at the ends, which support the parallelepiped shaped pan that supports the cooking grill. At the sides of said pan are placed flame guards, each one of which may in turn support further grills. Finally there is a hood which in conditions of use is placed on the back or used to close the barbecue, in the event of its being used as an oven. The equipment concerned is of the type fed with gas, so it is provided with at least one burner in the pan and may be equipped with a series of accessories, such as a spit, additional grills and other items.

Alternative solutions in which barbecues with a different cooking system are proposed, in this case a combined system, are described for example in US6167797 (Bollich). In this hypothesis the transportable barbecue, with an unusual chalet shape, has a cooking chamber on several levels and is provided with a device for cooking by convection, with means for boiling food, frying, and also for steam cooking.

US5413087 (Jean) suggests a barbecue with a round shape. In greater detail, it is composed of a container, essentially circular in shape, inside which is fitted the burner, fed by gas in a conventional way. The container supports a grill and, on top of this, a possible lid, also circular, which can be closed down on said container. Of the same kind is ES2129296 (Home), which proposes a barbecue, of the type with a semi-spherical base, provided with respective burner associated with a trolley structure. The semi-spherical base comes with a respective cover as closure.

#### **STATE OF THE ART CLOSE TO THE INVENTION**

US4681083 (Shu) describes an appliance for cooking, toasting, roasting and

barbecuing, and a respective heating device. In greater detail, the structure considered has a hob composed of a container which has a bottom, two sides and a back, on which structure two burners are fitted on the bottom. A first burner of the type for conventional flame with a single gas dispenser, circular in shape, and a second of the type for flame with a lengthwise development, with a rectilinear dispenser of tubular type. Both have supporting elements on top for cooking pots, circular in the first case, rectangular in the second hypothesis. The front part of the apparatus, along the bottom, is of the type with conventional knobs for controlling the gas supply flow and with related devices to support piezoelectric ignition.

Said hob may be supported and anchored to modular sub-structures, made mostly of wood but also of metal, which are composed of four or more rectilinear uprights, held together by transverse elements, with the aid of one or more orthogonal shelves. The bottom part of the uprights may be provided with only wheels, only feet, or alternatively mixed solutions. In some cases, where metal support structures are provided, there may be a metal door, generally on the front, which allow access to a rectangular compartment under the hob, surrounded by enclosing walls round the perimeter.

#### INCONVENIENCES

The following problems may be summed up for the solutions illustrated above.

First of all the known cooking appliances do not allow the user the possibility, after buying them, of replacing the burners or arranging them differently. It is certain, in fact, that once the appliance has been made with a determined type of burners, for example a grill on one side with underneath a container for lava stone heated by means of a conventional tubular burner, and on the other a griddle pan, also heated by means of a conventional tubular burner, there is no convenient possibility of replacing the original burners with others, which obviously results in a different formation of the element that supports cooking pots. This is the typical case of an appliance for cooking outdoors, which in some cases may require other functions in addition to the usual ones, such as arranging burners for a fish pan, for a fryer, or even for a paella pan.

It is therefore clear how in the situations the user must provide himself with a lot of equipment, one for each specific type of hob, as many as the different dishes to be prepared. This results in problems of transport, installation and objective bulk of the equipment and of the respective material in the case of catering and banqueting, and other problems, while for the individual user it will impose an evident limit on the expression of his cooking abilities, with relation to the different types of dishes to be prepared, since he can use the cooker only for those dishes for which the hob is

predisposed. Otherwise he will have to act empirically, where possible, making evident compromises as regards the quality of the food prepared. The alternative, also for the individual user or in the home, would be to provide himself with as many cooking appliances as the dishes for which it is prepared, but it is clear that the cost of the equipment makes it impossible to propose such a choice, also because they are not used regularly.

Also in the case of providing food for communities, when the cooker is fed with LPG, in the best of cases the cylinder is located in the area immediately below the hob. In the known appliances, these are shelves obtained substantially in view, near the base of the structure, where the cylinders remain completely in view or at the most behind a covering cloth or panel which partly conceals the front of the appliance itself in the area below the hob. On the practical side, besides the appreciable ugly aesthetic effect, during movement of the cooking appliance the cylinder may suddenly fall, damaging the individual devices of which it is composed and also the surrounding support structure itself. Another inconvenience lies in the fact that the compartment that may be provided for housing the cylinder has a common surface with a rectangular plan, without any subdividing partition. In other words, the space of the shelf which acts as cylinder holder is common with the adjacent surface intended for holding dishes and other items, with the consequence that the subdivision of the surface itself is not rational, resulting in a considerable loss of usable space.

With regard to the parallelepiped support structures of the hobs, which are an integral part of the cooking appliance, they are mostly made of wooden components, which are essentially formed of at least four uprights, to which are joined transverse connecting elements and one or more shelves orthogonal to said uprights. At least two of the four uprights, in one of the possible configurations, have wheels fitted onto the respective ends, so that the cooking appliance is of the mobile type, such as the conventional barbecue; in other cases the wheels may be on all four bottom ends of the uprights, or on none of them, giving a stable support. The solutions just described require ordinary nuts and bolts for assembly, so that the interaction of the wood material with the above-mentioned fixing means does not ensure the necessary stability of the whole. It is a well-known fact that, though of a pleasant appearance, wood is a living material and is delicate by nature, tending to deform and to yield locally at the corresponding fixing points, especially in the case of the appliance remaining exposed to changeable weather conditions. These situations give rise to unstable, delicate structures, which require constant, accurate maintenance.

Another inconvenience, related to solutions in which a hob support structure on wheels is used, concerns the handles for moving it. Usually these handles are fitted on the short sides of the cooking appliance which correspond to the heads or sides of the support structure, so that the user is able to push or pull the trolley more easily. However the handles and respective supports are quite often inadequately positioned and secured, with the tendency to yield locally, or the fixing system works loose when under stress. This occurs especially when moving the trolley structure of the type with only two wheels, as it is first necessary to raise said structure by the side with feet, so as to be able to move it. As the weights are not negligible, it is clear that, since the handles are projecting, they are particularly subject to yielding, requiring constant and specific operations to repair or reinforce them. Similar remarks can also be made about the hob support structures completely on wheels. In this case, the known solutions do not offer alternative handles to the conventional ones, so that their movement is not easy, due to the fact that they are located at the two opposite ends of the structure on wheels.

#### **BRIEF DESCRIPTION OF THE INVENTION**

These and other aims are achieved with the present invention according to the characteristics described in the annexed claims, solving the problems shown by means of a kitchen furnishing accessory, of the outdoor/indoor type, provided with an appliance for cooking food and with a modular support structure of the interchangeable hob, which hob support structure is composed of at least three tubular uprights, where, at the lower end, a bottom is fitted, surrounded around the edge by side panels also anchored to said uprights, and a door, hinged at the side, said panels and said door being curved. On the upper part of the modular structure, the hob is fitted onto the upper ends of said uprights, said hob comprising essentially a circular plate, the heating and cooking means, for example in the form of a burner, electric elements or other means, and the respective controls for controlling the working temperature, positioned along the front of the hob assembly. Lastly, projecting from said hob support structure is a ring-shaped element acting as a peripheral handle, without any interruption. Said support structure may be integrated in a more complex furnishing element, which substantially provides other functions, such as an oven, refrigerator, freezer, dishwasher, or simply a compartment with shelves, and a sink function, these last functions may be provided between two similar structures each supporting a respective hob, which hob, being interchangeable, may also be of the type with a different configuration from the opposite one.

#### **AIMS**

In this way, through the considerable creative contribution, the effect of which constitutes an immediate technical progress, certain aims are achieved.

A first aim consisted of realising a cooking appliance in which it is easy and possible to replace only the hob rapidly with another hob that has a different number and/or a different configuration of the heating means, for example the burner with the  
5        respective control device, considered an accessory element. In this way it is possible to vary the theme of the lunch, dinner or buffet rapidly, leaving ample room to the imagination of the cooks.

A second aim consisted of realising a modular appliance, in which the hob support  
10        structure is obtained with a small number of components, preferably of steel, obtained by laser cutting, with tubular uprights, side definition panels, access door, and various anchoring elements, easy to assemble, so as to keep codes to a minimum and achieve better rationalisation of stock management.

A third aim consisted of exploiting the available spaces rationally, keeping down  
15        bulk. This was made possible by choosing a circular shape for the configuration of the individual hob support structure. More particularly, as regards the compartment for housing the cylinder the shape is the one best suited, considering the circular shape of the cylinder itself, at the same time allowing the cylinder housing compartment to be separated from other adjacent compartments, which may be assigned to other interesting  
20        functions, for example to store plates and other items.

A fourth aim was to propose a support structure that would be versatile in its various combinations, which could be proposed in a single version or in a combined version with a second, similar structure, suited, as has already been seen, for a different type of hob, for example a grill for meat or fish, a paella pan, fryer, oven. In the last  
25        case the central portion may be equipped differently, with an oven, dishwasher, refrigerator, or alternatively even with open shelves, while the upper part can comprise a sink or, alternatively, be equipped as a counter and refrigerated counter for serving beverages, even with draught distribution devices.

A fifth aim allowed the realisation of a cooking appliance which is integrated in a  
30        kitchen furnishing unit for outdoor/indoor use, and may be either of the mobile type or of the stable type, with a fixed position, for setting inside a building, or outside, such as on terraces, porches and other sites.

A sixth aim was to realise a projecting perimeter ring, in the form of a continuous handle, conventionally called "Hula Hoop", which, besides acting as an ergonomic  
35        element for pushing or pulling the structure, if it is on wheels, is particularly suited to

act as a safety element, as it keeps the user at a due distance from the hobs. The perimeter ring is also convenient for the user, as it may be used to hang all round the unit a whole series of accessories that usually assist the work of the cook, such as cooking forks, all kinds of spoons, oil and spice rack and other items.

5 A further aim was to obtain a sturdy structure that would resist different meteorological conditions. It was possible to achieve this aim by using steel to make the essential components of the hob support structure.

These and other advantages and aims will appear from the following detailed description of some preferred embodiments, with the aid of the enclosed schematic drawings, the details of which are given by way of illustration, but not in any way limiting.

### CONTENT OF THE DRAWINGS

Figure 1 is a front view of a single hob support structure, of a cooking appliance on wheels.

15 Figure 2 is an overhead view of the hob support structure in Figure 1.

Figure 3 is an exploded view of the hob support structure in Figures 1 and 2.

Figure 4 is a detailed view of the upper end of an upright and of the respective anchoring device of the ring which surrounds the cooking appliance on wheels.

Figure 5 is a front view of a variation to the hob support structure in Figure 1, of the type with two hob support structures, integrated in a furnishing unit.

Figure 6 is an on overhead view of the variation in Figure 5.

Figure 7 is an axonometric view of the variation in Figure 5 with some of the interchangeable hobs.

Figure 8 is an exploded view of the variation in Figure 5.

### 25 PRACTICAL DESCRIPTIONS OF EMBODIMENTS OF THE INVENTION

With reference also to the figures, a first furnishing accessory for cooking 1A (Fig. 1) is described. This particular case is a support structure composed of three tubular and rectilinear uprights 2, preferably of steel, which tubular uprights act as legs and are placed at 120° to each other. Said uprights 2, at each end, respectively upper 20 and lower 21, realise a double shoulder 22, one diametrically opposite the other, where at least one is provided with a slot 220 for receiving transversely an anchoring tab 3. Said anchoring tab 3 is a substantially flat metal element with one end 30 wider than the opposite end 31, which is inserted through said slot 220, so that the end engages in a corresponding seat 221 obtained in the shoulder 22 opposite the one in where there is

the slot 220. In this way, the end 30 protrudes perpendicularly with respect to each upright 2 and on the internal side of the support structure. The function of said anchoring tabs 3 applied on the lower end 21 of the uprights 2 is to support the circular bottom 4, along the perimeter of which are seats 40 which partly surround the circumference of the upright 3. The bottom 4 is therefore resting on the perimeter and is screwed to the tabs 3. Onto the uprights 2 are fitted curtain panels 5, respectively two, and a conventional door 6 hinged at the side, in which at least the curtain panels 5 are provided along the upper side with air intakes 50 to favour circulation inside the cylindrical container thus obtained. Both the curtain panels 5 and the conventional door 6 are made of curved steel elements, for example shiny or satin-finished, and are joined to the support structure in such a way as to enclose within them the uprights 2. In the particular case, the anchoring of the curtain panels 5 and of the conventional door 6 is achieved by means of connecting flanges 7 which have a substantial "U" shape with two protruding wings 70. More particularly, to each upright 2 correspond two connecting flanges in such a way as to allow the engagement of the curtain panels 5 and of the conventional door 6 along two points for each respective vertical edge. Even more in detail, it is the intermediate portion of the connecting flange 7 which is anchored to the corresponding upright 2 while the two opposite protruding wings 70 allow the engagement of the vertical edges of the curtain panels 5 and of the door 6.

The upper part of the support structure of the furnishing accessory for cooking 1A contemplates the interchangeable join of the hob 8. In the particular case, see Figure 7, the hob 8 may be represented by a hob with two burners, with three burners of which one burner for a fish pan, or with two burners and an electric element, or with a paella pan, or a fryer, or a pasta cooker. The hob 8 also has a base plate 80, also made of steel, to which the heating means is joined. In this case, the base plate 80 surrounds the heating means and is circular in shape, identical to the shape of the bottom 4, having along the perimeter seats 81 which partly surround the round section of each respective upright 2. The fixing of the base plate 80 at the ends 20 of the respective uprights 2 is achieved in the same way as for the bottom 4, providing the same fixing tabs 3 which, projecting and engaged at a right angle to each of the ends 20 of the uprights 2, allow the peripheral portion of the base plate 80 to rest on them, and therefore allow the plate to be fixed conventionally with ordinary screws. A template 82 is also joined perpendicularly to the base plate 80, on the under side, which template develops for a portion of circumference corresponding to the sector that lies between an upright 2 and the adjacent upright 2.



Resting against the shoulders 22 of the upper end 20 of each of the uprights 2 are fixed flat arms 9 which, being at a right angle to the respective upright 2, project towards the outside of the support structure of the first furnishing accessory for cooking 1A. Said flat arms 9, which are therefore arranged radially, support a metal ring 15, in this case also of tubular steel, conventionally called "hula hoop", which, surrounding the outside of the upper end of the support structure of the first furnishing accessory for cooking 1A, protects against any risks of accidental contact, is functional for stiffening the whole assembly, and is useful as a handle means for transport and for holding accessories.

In the version in Figure 1, the support structure of the first furnishing accessory for cooking 1A is configured on wheels. For this purpose it is provided with two brackets 10 in the form of an upside-down "L", fixed to only two uprights 2 with the horizontal fin corresponding to the lower end 21, while the vertical fin engages the respective wheel 11 made of PVC suitable for foodstuffs. Lastly, the remaining upright 2 is equipped with an adjustable foot 12.

A possible variation of the support structure of the furnishing accessory for cooking 1A contemplates a combined support structure 1B. Figure 5 effectively represents this hypothesis. It is substantially composed of a first and a second support structure, both similar to those of the furnishing accessory for cooking 1A, each of which is without the curtain panel 5 on the side of the two structures that face each other. In this case a bottom 13 is provided which connects at the bottom the two support structures 1A and a top 14 which connects at the top said two support structures 1A. As regards the bottom 13, it has openings 130 at the rear for the passage of possible connections both for pipes and for the electric connection for the supply of the supported accessories, and it is fixed along the side ends at the bottom 4 of each support structure 1A. The upper connection top 14 is also of the type made of steel and has side ends made in such a way as to provide to opposed semicircular seats 140, each of which ends with two opposing end peninsulas 141. These opposing end peninsulas 141 present the same shape as the individual flat arms 9 provided in the single support structure 1A. In the particular case, for the anchoring and projecting support of the ring 15 each single support structure 1A uses a single flat arm 9 fixed to the upper end 20 of the upright 2 that faces towards the outside. The other two upper ends 20 of the uprights 2 which face the uprights 2 of the corresponding adjacent support structure 1A support and engage the opposing end peninsulas 141 and with them the respective upper connecting top 14. Between the bottom 13 and the upper connecting top 14 there is, in

the rear part, a back curtain panel 16 obtained of laser-cut stainless steel, and curved, provided with air intakes 160 along the upper side. In this particular case the front part of the combined structure has a panel 17, of wood, plastic or even metal, which defines a seat for housing an electric household appliance 18, which may be an oven, a refrigerator, a dishwasher or other appliance. In a possible variation to the place for the electric household appliance, the compartment thus obtained and which remains between the two support structures 1A, possibly closed by one or more doors, may also be equipped with technical shelves. Accessory elements may also be provided on the upper connection top 14. In the particular case it is represented by a large central hole 142, which allows the support of a sink 19 assisted by corresponding taps 190 fitted by means of a respective hole 143 to the same upper connecting top 14. In a further variation, instead of the sink 19, it is possible to contemplate the use of additional cooking appliances which may consist of burners with one or more jets, or griddles, a paella pan, pasta cooker and other items.

Both variations described may also be supplied in the version without wheels, that is with a stable layout, as an element for the interior furnishing of a kitchen. This solution of course does not make use of the wheels 11, but only of the adjustable feet 12.